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Session 42 - **Ground-Based** Optical **Telescopes & Instruments.**
Display session, Tuesday, January 14
Metropolitan Ballroom,

[42.03] Palomar Testbed Interferometer: Recent Progress

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The Palomar Testbed Interferometer (PTI) is a long-baseline infrared interferometer that has been installed at Palomar Mountain, CA. It is funded by NASA to demonstrate technology for the upcoming Keck Interferometer. PTI has a 11 0-m baseline, 40-cm apertures, and uses active fringe tracking and active delay lines for observations at 2.2 um. PTI is designed with a dual- star architecture to allow simultaneous tracking of a bright target star and phase-referenced observations of a faint astrometric reference star to enable high-accuracy, narrow-angle interferometry astrometry. The ultimate accuracy of this technique is at the. tens of microarcsecond level, enabling comprehensive searches for extra-solar planets. At PTI, single-star observations are fully automated for measurements of fringe amplitudes in wideband and spectrometer channels; the spectrometer channels are also used for real-time group-delay fringe centering. Recent instrument upgrades include the addition of a third siderostat to provide additional baselines. Recent engineering tests have been directed at automating dual-star measurements, validating the dual-star technique, and examining the atmospheric limit to astrometry.

Program listing for Tuesday